

**National Transportation Safety Board  
Washington, DC 20594**

**Brief of Accident**

**Adopted 05/29/2003**

DCA00MA023 File No. 13648	01/31/2000	Port Hueneme, CA	Aircraft Reg No. N963AS	Time (Local): 16:20 PST		
Make/Model:	Douglas / MD-83			Fatal	Serious	Minor/None
Engine Make/Model:	Pratt & Whitney / JT8D-217C		Crew	5	0	0
Aircraft Damage:	Destroyed		Pass	83	0	0
Number of Engines:	2					
Operating Certificate(s):	Flag Carrier/Domestic					
Name of Carrier:	ALASKA AIRLINES INC					
Type of Flight Operation:	Scheduled; International; Passenger Only					
Reg. Flight Conducted Under:	Part 121: Air Carrier					
Last Depart. Point: PUERTO VALLARTA			Condition of Light: Day			
Destination: SAN FRANCISCO, CA			Weather Info Src: Weather Observation Facility			
Airport Proximity: Off Airport/Airstrip			Basic Weather: Visual Conditions			
			Lowest Ceiling: Unknown			
			Visibility: .00 SM			
			Wind Dir/Speed: 230 / 008 Kts			
			Temperature (°C): -9			
			Precip/Obscuration: None / None			
Pilot-in-Command	Age: 53		Flight Time (Hours)			
Certificate(s)/Rating(s)			Total All Aircraft: 17750			
Airline Transport; ;			Last 90 Days: 133			
Instrument Ratings			Total Make/Model: 14149			
Airplane			Total Instrument Time: UnK/Nr			

The Board's full report is available at <http://www.nts.gov/publictn/publictn.htm>.

On January 31, 2000, about 1621 Pacific standard time, Alaska Airlines, Inc., flight 261, a McDonnell Douglas MD-83, N963AS, crashed into the Pacific Ocean about 2.7 miles north of Anacapa Island, California. The 2 pilots, 3 cabin crewmembers, and 83 passengers on board were killed, and the airplane was destroyed by impact forces. Flight 261 was operating as a scheduled international passenger flight under the provisions of 14 Code of Federal Regulations Part 121 from Lic Gustavo Diaz Ordaz International Airport, Puerto Vallarta, Mexico, to Seattle-Tacoma International Airport, Seattle, Washington, with an intermediate stop planned at San Francisco International Airport, San Francisco, California. Visual meteorological conditions prevailed for the flight, which operated on an instrument flight rules flight plan.

Brief of Accident (Continued)

DCA00MA023				
File No. 13648	01/31/2000	Port Hueneme, CA	Aircraft Reg No. N963AS	Time (Local): 16:20 PST

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION  
Phase of Operation: CRUISE - NORMAL

Findings

1. (C) LUBRICANT, GREASE - INADEQUATE
2. (C) MAINTENANCE, LUBRICATION - INADEQUATE - COMPANY MAINTENANCE PERSONNEL
3. PROCEDURE INADEQUATE
4. (F) INSUFFICIENT STANDARDS/REQUIREMENTS - COMPANY/OPERATOR MGMT
5. (F) INADEQUATE CERTIFICATION/APPROVAL - FAA(ORGANIZATION)
6. (C) FLT CONTROL SYST, HORIZ STAB DRIVE - WORN
7. (C) MAINTENANCE, INSPECTION - INADEQUATE - COMPANY MAINTENANCE PERSONNEL
8. PROCEDURE INADEQUATE
9. (F) INSUFFICIENT STANDARDS/REQUIREMENTS - COMPANY/OPERATOR MGMT
10. (F) INADEQUATE CERTIFICATION/APPROVAL - FAA(ORGANIZATION)
11. FLT CONTROL SYST, HORIZ STAB DRIVE - STRIPPED THREAD
12. (F) INADEQUATE CERTIFICATION/APPROVAL - MANUFACTURER

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Occurrence #2: LOSS OF CONTROL - IN FLIGHT  
Phase of Operation: CRUISE - NORMAL

Findings

13. (C) AIRCRAFT CONTROL - NOT POSSIBLE

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Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER  
Phase of Operation: DESCENT - UNCONTROLLED

Findings

14. TERRAIN CONDITION - WATER

Findings Legend: (C) = Cause, (F) = Factor

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The National Transportation Safety Board determines the probable cause(s) of this accident as follows.

A loss of airplane pitch control resulting from the in-flight failure of the horizontal stabilizer trim system jackscrew assembly's acme nut threads. The thread failure was caused by excessive wear resulting from Alaska Airlines' insufficient lubrication of the jackscrew assembly. Contributing to the accident were Alaska Airlines' extended lubrication interval and the Federal Aviation Administration's (FAA) approval of that extension, which increased the likelihood that a missed or inadequate lubrication would result in excessive wear of the acme nut threads, and Alaska Airlines' extended end play check interval and the FAA's approval of that extension, which allowed the excessive wear of the acme nut threads to progress to failure without the opportunity for detection. Also contributing to the accident was the absence on the McDonnell Douglas MD-80 of a fail-safe mechanism to prevent the catastrophic effects of total acme nut thread loss.